

QNAP

review TS-659 Pro+

ADDRESSING THE NEEDS OF EVER INCREASING PERFORMANCE AND STORAGE CAPACITY, QNAP BRINGS THE PRO + SERIES GETTING THE MUSTARD FROM THE REGULAR X59 SERIES...

We look at the QNAP TS-659 Pro+ unit and our comments are valid for all units in the x59-Pro + series, QNAP has assured all units have exactly the same specifications and features available regardless the amount of disks the unit can hold.

QNAP TS-659 Pro+

As usual, the design is kept the same as with the previous series, Front display allows easy setup of the unit without using a computer, we have a USB host, copy button and power button in front and no less than 6 trays available to fill up with hard drives up to 2TB. The special thing here is that QNAP allows both 2.5" hard drives to be used as well as 3.5" hard drives. Previously separate units were provided to use 2.5" hard drives but we never felt those where needed. This way, a combination of both is far better for the flexibility of the system.

Few led integrate into the front, if a slot is occupied the green led above the disk is active, during write operations blinking indicates disk activity. Status, LAN, USB and eSATA each have their own led integrated into the upper part of the unit.

Each disk tray can be locked with a key preventing accidental removal. The display integrates 2 buttons that offers IP Address info and the name of the unit. We are wishing for the display to become more useful. It's main value right now is easy setup and IP Address info, error messages and extending this with disk space usage among others would give it little more appeal and become more useful in general.

The rear end is impressive with two big main fans (low noise, intelligent) and a CPU fan. Two network ports are available, both GBIT and no less than 4 USB hosts. Two eSATA ports are located on the upper right and at the bottom we can see the little gap for the Kensington Lock. The VGA port is used for analysis during startup of the QNAP TS-659 Pro + and not generally used by the customers.

Build quality, as usual, is quite up to par. The unit is audible but not so much it becomes an annoyance providing you are not sitting 1 meter in front of the unit. Obviously placement is key to avoid the rattling noise of the hard drives (would and iron guide noise quite well) so units are best placed on soft materials that may reduce the noise even further.

Included in the box are the unit, power cable, 2 sets of screws (for 2.5" and 3.5" hard drives), 2 network cables, CD-ROM with tools and manual accompanied by a printed quick guide to get started.

The unit is connected in no time and the display setup assistance allows us to get started under 2 minutes. Well done!



TS-x59 Pro + Series

The x59 Pro+ series is available in 2 disk layout, 4, 5 and 6. They all come with 1GB memory and the Intel Atom 1.8GHz Dual-Core processor. The regular x59 Pro series was equipped with the same amount of RAM (1GB) and the Intel Atom 1.66GHz Dual-Core processor so the main difference lies in the little extra CPU core which stands for merely a 7.5% increase of CPU power. If this will yield in performance increase warranting the Pro + series begs to be answered!



Firmware Updates

Firmware updates allow the storage to update and activate new features or correct issues. QNAP detects available updates automatically and prompts for installation.

SMARTER UPGRADES:
What MPC has to say:

System Administration



- 1) General Settings
- 2) Network
- 3) Hardware
- 4) Security
- 5) Notification
- 6) Power Management
- 7) Network Recycle Bin
- 8) Backup System Settings
- 9) System Logs
- 10) Firmware Update
- 11) Restore Factory Default

Admin Interface

The QNAP TS-659 Pro + can easily be administered via an admin console. The layout is delivered by icons and the features are overall well explained. From creating shares, users and groups up to enabling / disabling certain services happens

System Administration



Disk Management



Access Right Management



The main features provided include a web file manager, multimedia station (UPnP), download station for torrents and web/FTP files, iTunes service and for developers among us a MySQL Server. If this isn't enough, one can install additional applications using the [QPKG](#) options like the Squeeze-Box Server application for music streaming and a list of others.



The beauty of it all is that the interface allows enabling and disabling features and make them more easily accessible by placing them on the main logon window. From the main logon screen, you can use the arrow left / right keys to navigate to where you want to be.

There's too much to cover inside this review if we run through all the options available on the admin panel so we will stick to the main categories.

System administration, disk management, access rights management, network services, applications, backups, external devices and system status. Each category explains well what is underneath it so finding your way around should be easy.

The main page integrates Qnap's latest news and links to online resources for discussion. Login to the system on a regular basis allows you to follow the latest releases.



QNAP Latest News

- (2010.10.20) [Firmware] TS-659 Turbo NAS Official Firmware Released (v3.3.4 Build1019)
- (2010.06.02) [JUNIA] QNAP QGet (Windows) 1.0.11 Build 0528
- (2009.12.25) [JUNIA] QNAP QGet (Mac OS) v1.0.4 Build 1211
- (2009.12.25) [JUNIA] QNAP QFinder (Windows) v3.3.17 Build 1116
- (2009.12.25) [JUNIA] QNAP QFinder (Mac OS) v1.0.5 Build 1025



A newer firmware version (3.3.4 Build1019T) is now available for download. Would you like to perform the update now?

OK CANCEL

Over the years we have been commenting on many aspects of QNAP's storage devices. On some levels QNAP came true however we do feel on some points QNAP is not adapting as well as they could.

Trends in the category of storage devices is adjusting the interface and features which is obviously an important part of product development, however convenience wise we feel most brands are lacking the progress we wish for. It's as if the new models always concentrate around increasing power and not necessarily increasing the overall value of the units to become even easier for the customers.

We will list most of them once more throughout this review for QNAP to pickup.

QNAP's feature list is impressive however not all features are tuned to the level we like to have them. Most are easy to configure and unlike in the old days were one was afraid of starting with NAS, there's no reason no more and currently setting up a NAS doesn't require a lot of knowledge. Everything is assisted by easy to use wizards and there's always the online community ready to help!

The only thing that may keep a lot of people away from purchasing a NAS like the QNAP TS-x59Pro + series may be the investment. Even though prices have gone down severely compared to a few years ago, compared to using regular external storage solutions a NAS is still far from competitively priced!



Applications...

The main purpose of a NAS is providing safer storage, central storage and shared storage. With several brands, NAS has shifted to become regular media storage devices! One should not interpret "safer storage" as no need to backup important data any longer!

Applications



Applications



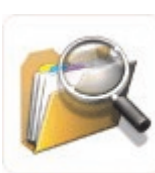
- 1) Web File Manager
- 2) Multimedia Station
- 3) Download Station
- 4) Surveillance Station
- 5) iTunes Service
- 6) UPnP Media Server
- 7) MySQL Server
- 8) QPKG Plugins

While we are pleased with all features, there are two major remarks since years. QNAP forced the use of default folders for the UPnP and Multimedia applications so the user cannot define their own. It sits hardcoded and that's a shame for the flexibility of the unit.

The Download station and QGet application fall short in providing a flexible way to maintain username and password for FTP and download sites like RapidShare and Hotfile, neither is the ability provided to add more than 1 file at a time with all inconveniences attached.

Applications explained

The QNAP TS-659 Pro + comes with tons of applications integrated to take away the need of powering up your PC. Perfect examples include sharing data with media players, a download station that can do all the download work for you and then some... Even though applications are provided, some are lacking the features to make them as convenient as their PC alternatives.



The web file manager is crucial to speed up internal file transfers. Where using a PC will transfer data to the PC and back to the unit, the internal web file manager does everything internally and is easier to administer your files.



The Multimedia Station provides you with the ability to catalog your media and present it to a media player supporting UPnP. The Multimedia station is similar to other UPnP applications but is developed by QNAP themselves.



Download Station is one of the weaker parts and still should be considered as a major benefit. The weak part is the QGet application that is not up to par with today's needs at all (Client side application used on the PC to add files to the NAS for download. Can be torrent files, FTP or HTTP files). The weak part of the QGet application is where it doesn't allow to add more than 1 file at once and requires entering username and passwords for each file separately without remembering them. This falls short of today's needs where FTP and HTTP downloads become more popular (RapidShare, Hotfile etc...)



Surveillance Station allows you to add camera's throughout your location who then are administered by the NAS. Feeds can be recorded for up to 4 camera's and the interface allows you to watch live feeds.



The iTunes Service speaks for itself. This service allows you to share music over the network to compatible DMP's (Digital Music Players). The integration of iTunes services used to on hot demand and has become a feature that may influence purchase decisions.



The UPnP Media Server integrated here comes from the popular Twonky Media service, one of the most advanced UPnP solutions out there and can be used as an alternative for the QNAP's in house UPnP application.



MySQL is a database server my MySQL databases. Using the QPKG installation options, you can install MyPHP which in combination with MySQL allows you to develop websites on the NAS and even serve them on the internet.



Mentioned before, the QPKG allows you to easily install additional applications on the NAS. Most popular is the music streaming server "Squeezebox" and UseNet download clients. There packages available in

More apps...

different categories from QNAP which are maintained regularly. QNAP provides a CD-ROM which includes more applications. We mentioned QGet already, a program that sits on your desktop and catches download links for torrent files.

Additional applications provided by QNAP include several applications for backing up data from your PC's, USB drives and more... There's a 5 PC license included so you should be set for home use. Also iPhone / iPod popularity did not go unnoticed by QNAP and applications are provided for QGet (QGetmobile) and for streaming music (QMobile). Especially the QGet application could do with a better internet integration for downloading files and tuning of titles downloaded as titles downloaded with QGet for PC are named differently from files with the iPhone application. No need to say, this

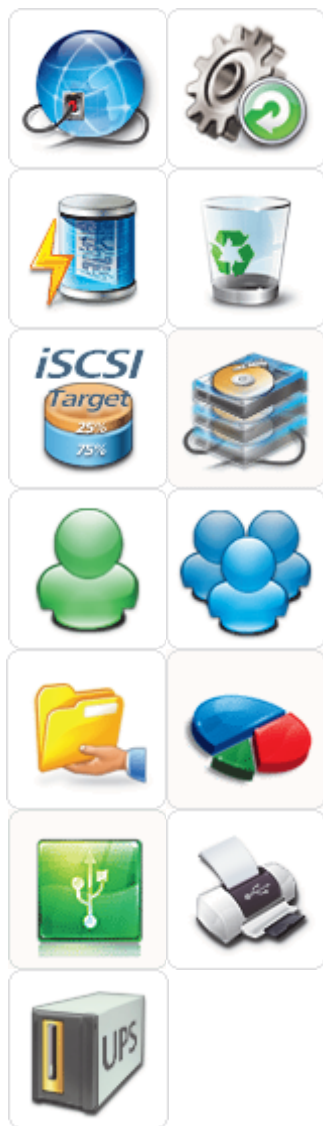


Features galore...

Features are not limited to applications and services, also convenience is a feature which allows one to tweak the NAS to a certain environment more easily without sacrifices.

SMARTER FEATURES:
We have been wishing for...

Features



- 1) Network Settings
- 2) Backup Settings
- 3) Power Management
- 4) Network Recycle Bin
- 5) iSCSI
- 6) Virtual Disk
- 7) Users
- 8) Groups
- 9) Shares
- 10) Quota
- 11) USB OneTouch Copy
- 12) USB Print Server
- 13) UPS Settings

The QNAP TS-659 Pro + is stacked with features from A to Z. Some are limited but most offer the full range of options. The two network interfaces can be set to Load Balance, backup if one connection fails or be connected to two different networks at the same time.

Users can be created and assigned to groups following access rights for each share separately for FTP, SMB and NFS. Quotes can be set per user (general only) but not on folders which is a shame.

Once the system is fully configured, QNAP provides a backup solution so you can save your settings as a backup.

The print server allows the connection of a USB printer which is then shared over the network to all PC's, notice however this is limited to print features and not scanning and FAX. UPS support is provided to ensure the NAS can power down properly when power fails.

More advanced features are found in the ability of iSCSI and Virtual Disk support. These allow sharing a part of the storage capacity to computers on the network and come up as if the storage space is attached to the computer like a regular drive letter.

The recycle bin is a useful feature. Deleting files without the recycle bin enabled will free up the space immediately however files cannot be recovered. Using the recycle bin will not free up the space immediately but keep the files until you delete them manually. Jumbo frames are supported on

both network cards and the use of IPv6 is covered. The QNAP provides the ability to use DDNS services so the QNAP storage can be used over the internet. Both Telnet and SSH are enabled on the Pro series as well allowing advanced users to fiddle with the system OS.

Power management is a huge item when it concerns convenience. The unit can be scheduled to power on and power down at defined times. The finesse on the QNAP to allow maximum configuration is superb. The schedule allows to tune weekdays and weekends separately to offer the most flexible schedule possible based on your needs. Options to configure include Shutdown, Restart and Power On.

Even so, there are ways to increase functionality of the power management to integrate with the rest of what QNAP can do for you. For instance, powering the unit on overnight to download automatically is possible, shutting it down when finishing the tasks is not possible so one must guess the time it needs or leave the unit on during the night. In quite a few cases people leave the NAS running 24 hours a day, 7/7, but many do prefer not to!

Our final item to discuss is the fact we can use the USB OneTouch Copy function. A fast backup mechanism...

1. Better Quota management including ability to set quota on folders. Also users should have separate quota options instead of making it a global option for all users.
2. Activities triggered by finishing tasks. When downloads are finished, unit powers down.
3. A restart and shutdown options should be provided standard on all pages instead of power management only.
4. Incremental OneTouch Copy function that synchronizes the attached device to an internal folder.

Set power on/ power off/ restart schedule

☒ Enable schedule

☐ Postpone the restart/shutdown schedule when a replication job is in progress.

Shutdown ▼ Daily ▼ 7 ▼ 0 ▼ + ▼ -

Weekday
Weekend
Daily
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday

How it works is where you connect a USB hard drive to the front port of the unit and press the USB Copy button, the content of the hard drive is copied to the internal storage. This may sound as an ideal feature, admittedly it is handy but not perfect.

The issue is, the system does not do any incremental backup and copies all data from the external disk to the an internal folder. Repeating this will create another folder with the full content of the hard drive.

It would be so much more useful to have some form of incremental feature to support this.



Services and options

QNAP stacked up the abilities of their NAS series and they live up to our expectations. QNAP is considered one of the brands that provides the most versatile set of services...

What we can say about the services provided is that we can't think of what more we could possibly want. The QNAP TS-x59 Pro series is just full of it. It doesn't mean they all work as we would like it, but they are there...

There's also a reversed system compared to the ability backing up an external drive by copying "to" an external drive.

Services...



- 1) Microsoft Networking
- 2) Apple Networking
- 3) NFS Service
- 4) FTP Service
- 5) SSH/Telnet Service
- 6) SNMP Settings
- 7) Web Server
- 8) Network Discovery
- 9) Replication
- 10) Apple TimeMachine

Windows networking is based on CIFS (SMB) and the unit can be joined to a domain and integrates with AD. Most home users will however use the system in a regular workgroup. In Apple environments, the "Apple Networking" can be enabled.

For media streaming it is generally known NFS is more stable than SMB so NFS can be enabled on a per share level including security settings.

Each icon represents something starting with properties, SMB / CIFS permissions, NFS permissions, WebDAV access control and refresh.

FTP support is provided and either enabled or disabled. We can use Anonymous as well and each folder share created will be served over FTP as well if enabled using the permissions set on the folder. This however means all folders by default are shared over FTP. You can set the amount of users that may connect at the same time and limit the upload and download speed.

Connection

Maximum Number of all FTP connections:

Maximum Number of Connections For a Single Account:

☐ Enable FTP transfer limitation

Maximum upload rate (KB/s): KB/s

Maximum download rate (KB/s): KB/s

The unit can be configured for SNMP and comes with a Apache Web Server integrated for developers. Also Telnet and SSH features are considered for the pro's and provided.

Discovery services are provided for UPnP so ser devices can find the QNAP server and for Bonjour used on Apple systems.

Backup options come in several forms. Were we previous were able to backup the unit's settings and a USB hard drive using the OneTouch copy function or PC backup application provided on CD-ROM, the QNAP server integrates with RSync (replication service) and Apple TimeMachine support and even more...

External Drive

Back up to an external storage device

Back up the local disk data to an external storage device. You can select instant, automatic, or schedule backup.

Available shares	Shares to back up
Download	
HumanIT	
Multimedia	
Network Recycle Bin 1	
Public	
Recordings	
Software	
StartServ	
Temp	

A lot of backup options provided and one would hardly consider there could be more... Wrong! There could be more, especially concerning the Rsync integration which should allow backing up an FTP location. That would complete the deal. I can't help but thinking the many ways to backup data is a little overkill and may confuse users on choosing a proper backup strategy but at least there are many choices.

There is so much more to find inside a QNAP TS-x59 Pro+ series, handy features, pro features and the ability to add more and more to the unit can make things a bit overwhelming, but as you go one will learn each of these have it's purpose and benefits. Having to many features, which is how it feel sometimes, beats not having enough so we can hardly hold this against QNAP.

One last thing we can mention is one has the ability to overview the services enabled and siabled which is very much needed concerning the many options we can administer.

System Service	
Microsoft Networking	Enabled
Server Type	Standalone Server
Workgroup	WORKGROUP
Enable WINS server	Enabled
Enable Local Master Browser	Enabled
Apple Networking	Enabled
Apple Zone Name	*
Unix/Linux NFS	Enabled
Web File Manager	Enabled
FTP Service	Enabled
Port	21
Maximum Connections	30
System Port Management	
Port	8080
Multimedia Station	Enabled
Enable iTunes Service	Enabled
Enable UPnP Media Server	Enabled
Download Station	Enabled
Web Server	Enabled
Port	80
register_globals	Enabled
CGI	Enabled
MySQL Server	Enabled
Enable TCP/IP Networking	Enabled
Surveillance Station	Enabled

Also a resource monitor is available showing you everything about CPU usage, disk usage, memory usage, bandwidth and processes. You can stay on top of things at any time using the admin panel which overall is nicely designed, well categorized and easy to understand. Making such a complex device and so many features easy to handle, makes us give credit to QNAP!



Performance and Conclusion

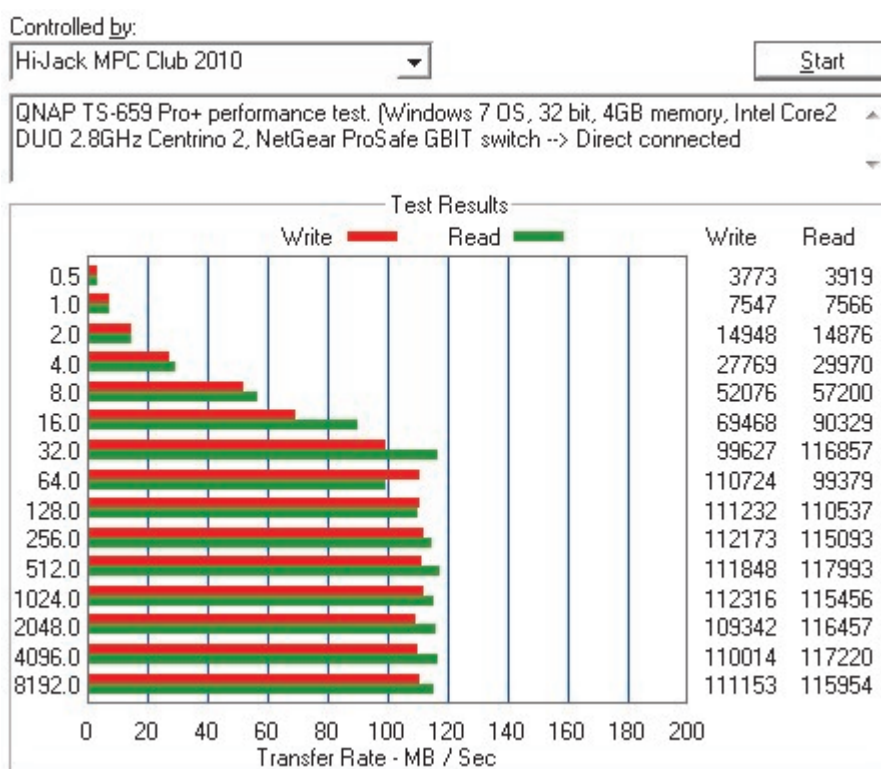
The only difference between the Pro and the Pro+ series seems to be land increase of 7.5% CPU power. The question it raised with us, was a new unit warranted enough for the added performance this may or may not bring?

Performance

We fired up our PC based on the Intel Centrino 2 CPU running at 2.80GHz (T9600), 2SSD 160GB hard drives in STRIPE mode and 4GB Memory running on Windows 7 32-bit OS. The exact same configuration we used to test the earlier QNAP TS-859 Pro and a perfect setting to measure an increase of performance. (Index 5.9)

Both the PC and QNAP TS-659 Pro+ are connected to a NetGear Gigabit ProSafe switch (GS116).

The application we use is ATTO benchmark which offers us raw read and write performance results. Those results are then used to determine not only the performance of the QNAP TS-659 Pro + but also used to compare it with previous measurements we have stored in our DB for the previous units tested by us, mainly the earlier version of the X59 series running on the Intel Atom CPU 1.66GHz Dual Core. The difference is minimal to run up to 1.80GHz on the Pro + so let's see how it performs...



One thing is certain, the performance of the QNAP TS-659 Pro+ on our test bench is stable and consistent. We squeezed out little under 120MB/s for both read and write performance without doing anything to tune performance and that's plain brilliant performance for storage where we look at it mainly as media server for BD, DVD and HD files where we handle large files continuously.

Comparing the results with our previous tests, it reveals the 7.5% increase in power in the latter Pro + series increases the performance with no less than 20% (from 90MB/s to 110MB/s), justifying the new model for whom performance is key as that remains the only difference to find.

The price difference between the regular Pro and Pro+ series for the TS-659 is about €80, coming down at about 7% more expensive. That's fair however still the units themselves are quite expensive, average €180 per tray and that's without hard disks included.

CONCLUSION

QNAP keeps impressing us with their units. Decent build quality, excellent feature set and up to par performance. It's almost a shame such device is not featured in more households but we know the reason for that, the gap between regular disk storage solutions and a NAS is so huge that hardly anyone thinks of a NAS as a good investment compared to other alternatives. Those may come with no features and less convenience, never the less, they store data just fine...

For high storage needs, it's ok to charge such a price, for a 2-bay model however starting above €500 is just over the top and makes the unit inaccessible and overlooked by the masses. If QNAP and other providers could come up with more affordable solutions they would break away from the niche market owners and business only considering these.

Software wise, QNAP can enhance a few things further and tune the features better so they work together (quota and folders, power management) and could increase the value of their accompanying apps for both PC and iPhone that perform below our expectations.

It goes without saying, there's nothing QNAP can do wrong for me as their units are way up there, I do strongly feel they can do some parts better though and they should.

The QNAP TS-659 Pro+ should as well have distinguished itself more from the earlier x59 models by doubling the RAM memory from 1 to 2GB although e are not sure we need it as the performance is way up the performance ladder for a NAS.



Motivation and points...

Now we are ready to look at the 5 major items we search for in any product and discuss in little detail our findings in each section. Notice that we review the storage devices for media entertainment environments @ home and not for regular business usage...

Scores and Motivation

Hardware is well built with silent fans that operate based on heat. All cages can be locked and are built of decent materials. The display is handy and the options provided are sufficient including 4 USB ports in total and 2 eSATA. Only the front is plastic whilst the rest of the unit is steel. The specifications are up to par except for memory where we would have wished 2GB instead of 1.

Ability is well provided. All features a pro would wish for are included and the amount of options for some abilities like backups are surprisingly extensive up to the point they become too much. Despite so many features in backups, some are left untouched (FTP backups). Also with the abilities of some software items provided we felt QNAP could develop them to integrate with each other or simply be lifted towards 2010. Some tools feel rather old in their functions.

Overall design of the unit and its interface is sublime. Easy to handle, access and setup are the key points QNAP paid attention too and still managed to keep every advanced feature included. There is some improvement possible where the options become a little better placed and gathered into less pages, but a unit that comes with many options likely is normal to have many tabs and pages for configuration. The categories work well and options are in general easy to find.

Convenience is a point where QNAP lost some points and we mainly target the Quota system, power management and the QGet software application bundled with the NAS. To some extent, also the download station fell short of impressing us despite it does the job. There are a few sections where QNAP can increase convenience with a little effort and the lack thereof despite repeatedly pointing them out in previous reviews costs points.

Price / Feature, the QNAP TS-659 Pro + is filled with goodies of which no one is likely to use all. The flexibility and possibilities of the unit are superb but in general for this kind of unit, even with the abilities and options shown, we feel the price level is just to high to attract regular users to move away from portable disks and cheap NAS efforts from the competition. Sure it performs a lot better but it doesn't make the price any less hard to swallow. A €150 to disk ratio is our regular measured price while the two bay NAS model TS-259 Pro + reaches + €250 per tray and this TS-659 Pro + does much better with €180 per tray. That is without disks...

Final conclusions, expensive but such a sweet device that has pepper underneath the hood. Not a single disappointment is to be found however overall quite a few enhancements and convenience issues makes one longing for updated firmware to address them. QNAP remains a top player on the market for accessible and easy to use storage but owning a QNAP will cost money... and a lot of it!

We can recommend it providing you can afford it. :-)

EXTRA

What we did not mention specifically in the review, the unit needs 280 seconds to start up completely.

The unit measures 17.5cm height, 25.5cm width and is about 23.5cm deep.

Consumption is about 22W in standby and remains below 50W in full operation (average 43W) and if WakeOnLan is enabled during off mode, the unit consumes 1W.

AWARDS

Even though the price is high, the amount of features and abilities stashed inside the QNAP, the development in general, the quality and performance are considered amongst the top of the world for home entertainment use. QNAP has steadily been progressing and will continue to address flaws. We recognize the value and efforts of QNAP with issuing an "Editor's Choice" award. (Excludes Pricing)

